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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/694,430

10/27/2003

Keiichi Yamamoto

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10/06/2006

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EXAMINER

ALLISON, ANDRAE S

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,430

Applicant(s)

YAMAMOTO ET AL.

Examiner

Andrae S. Allison

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 10/23/2003; 3/31/2006; 1/19/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamotsu (JP 11-134090) in view of Paul et al (US Patent No.: 7,050,606).

As to claim 1, Tamotsu discloses a hand pattern switch device (operation output device, page 1, [p][0001], line 1 of translation) which has image pickup means (e.g. CCD camera; page 2, [p][0011], line 2 of translation) for picking up an image of a hand (page 1, [p][0005], lines 1-6 of translation) that is within a predetermined image pickup zone (see Drawing 3 of translation) and in which a hand pattern is recognized from and a hand motion is detected from the picked-up image to obtain operation information (e.g. on-off operation; page 2, [p][0007], line 1 of translation) for a controlled object (e.g. radio; page 1, [p][0005], line 9 of translation) comprising: controlled object setting means for selecting one of controlled objects in accordance with the recognized hand pattern and/or the detected hand motion (see page 4, [p][0028] where a control object is selected base on which partition (A, B or C) in which the operator's hand is placed); and detection mode changing means (configuration switch; page 2, [p][0014], line 1 of

translation) for changing a mode of detection of the operation information based on the hand motion in dependence on which controlled object is selected pattern (see page 3, [p][0016] of translation where the index, middle and third finger corresponds to on and off operation of air conditioning equipment).

However Tamotsu does not teach a hand motion is detected from the picked-up image. Paul teaches a system for controlling devices based on hand or body gesture (column 2, lines 17-19) that includes wherein a hand motion is detected from the picked-up image (see column 3, line 36-40, where capture image data is processed by a dynamic gesture algorithm). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the system for controlling devices of Paul to the operation output device of Tamotsu for controlling comfort or entertainment features such as heater and air conditioner or to "facilitates the automatic adjustment of car seating restraints based on head position" (column 2, lines 24-29).

As to claim 5, Tamotsu discloses a vehicle hand pattern switch device (see page 2, [p][0011], line 2 where an operation output device is implemented in an automobile) which has image pickup means (e.g. CCD camera; page 2, [p][0011], line 2 of translation) for picking up an image of a hand (page 1, [p][0005], lines 1-6 of translation) that is within a predetermined image pickup zone (see Drawing 3 of translation) and in which a hand pattern is recognized from and a hand motion is detected from the picked-up image to obtain operation information (e.g. on-off operation; page 2, [p][0007], line 1

of translation) for a controlled object (e.g. radio; page 1, [p][0005], line 9 of translation) comprising: the image pickup zone being at a location which is located laterally to a steering wheel of a vehicle and to which a driver who steers the steering wheel can extend a driver's arm without changing a driving posture (see page 2, [p][0011] of translation, line 2-4 where predetermined image pickup zone is located on the left side and within range of an operator so that he can perform various actuation signals).

However, Tamotsu does not teach a hand motion is detected from the picked-up image. Paul teaches a system for controlling devices based on hand or body gesture (column 2, lines 17-19) that includes wherein a hand motion is detected from the picked-up image (see column 3, line 36-40, where capture image data is processed by a dynamic gesture algorithm). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the system for controlling devices of Paul to the operation output device of Tamotsu for controlling comfort or entertainment features such as heater and air conditioner or to "facilitates the automatic adjustment of car seating restraints based on head position" (column 2, lines 24-29).

As to claim 3, Note the discussion above, Paul teaches the hand pattern switch device wherein said detecting mode changing means includes: a moved distance detecting mode where a moved distance of the hand in the image pickup zone is detected and used as the operation information (see column 3, line 36-38, where a feature tracking algorithm outputs position information); a stop time detecting mode

where a stop time of the hand at a stop position, to which the hand has been moved by a predetermined distance or more in the image pickup zone, is detected and used as the operation information (see column 3, line 36-38, where a feature tracking algorithm also outputs time information); and detection mode setting means for setting at least one of the moved distance detecting mode and the stop time detecting mode (see column 3, lines 44-47, where the system check if the velocity of a motion is below a certain threshold).

As to claim 4, Tamotsu teaches the hand pattern switch device wherein the moved distance detecting mode is a mode in which the moved distance of the hand is detected in multi-stage fashion using a predetermined moved distance as a unit of detection (see page 6, [p][0047] of translation where the control unit is incremented or reduced by step size defined beforehand according to image pick-up sign).

As to claim 6, Tamotsu teaches the vehicular hand pattern switch device wherein the image pickup zone is at least 50 mm apart from an outer periphery of the steering wheel (the image pickup is preferable located within 50 mm from the steering, because it would be within reach of an operator but still not too close to interfere with his driving) the image pickup zone being a rectangle in shape and having a size of about 600 mm in a fingertip direction and about 350 mm in a width direction of the driver's hand which is extended (see Drawing 3 of translation where the image pick-up zone has length and width of 30-40 cm, therefore, it is obvious that the image pick-up zone can be a

rectangle).

As to claim 8, note the discussion of claim 5 above.

As to claim 10, note the discussion of claims 1-3 above.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamotsu (JP 11-134090) in view of Paul et al (US Patent No.: 7,050,606) further in view of Bogen et al (US Patent No.: 5,815,147).

As to claim 2, note the discussion above, Both Tamotsu and Paul do not teach the hand pattern switch device wherein said controlled object setting means cyclically selects one of the controlled objects each time a predetermined hand motion pattern is detected.

Bogen teaches a system for providing virtual play environment (column 2, lines 12-14) that includes wherein said controlled object setting means cyclically selects one of the controlled objects each time a predetermined hand motion pattern is detected (cycle through selected objects; column 5, line 22-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the system for providing virtual play environment of Bogen to the operation output device of Tamotsu as modified by Paul for "highlighting or otherwise indicating that successive object within a scene is selectable" (column 5, lines 17-20).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamotsu (JP 11-134090) in view of Paul et al (US Patent No.: 7,050,606) further in view of Smith et al (US Patent No.: 6,128,003).

As to claim 7, note the discussion above, Paul teaches the vehicular hand pattern switch device wherein the detection of the hand motion in the image pickup zone includes detecting a 10 mm to 70 mm displacement of a centroid position of the hand, determined from the picked-up image, as a controlled object selection and/or an amount of operation of a controlled object concerned (see column 3, line 36-42, where capture image data is processed by a dynamic gesture algorithm and when a gesture is recognized a control signal is sent to a device and the appropriate response is performed).

However, both Paul and Tamotsu do not teach wherein the detection of the hand motion in the image pickup zone includes detecting a 10 mm to 70 mm displacement of a centroid position of the hand. Smith teaches a hand gesture recognition system (column 2, lines 64-65) that includes wherein the detection of the hand motion in the image pickup zone includes detecting a 10 mm to 70 mm displacement of a centroid position of the hand. (see Fig 7, where the centroid of a hand is detected and column 9, lines 61-67, where the displacement of the centroid is used to recognize a "swipe" gesture). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the hand gesture recognition system of

Smith to the operation output device of Tamotsu as modified by Paul to perform gesture recognition "effectively with relatively low-performance processing circuits" (column 2, lines 64-67) for e.g. microprocessor for game or graphics applications (column 3, lines 14-16).

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamotsu (JP 11-134090) in view of Paul et al (US Patent No.: 7,050,606) further in view of Pryor et al (US Patent No.: 6,766,036).

As to claim 9, note the discussion above, both Paul and Tamotsu the vehicular hand pattern switch device, wherein said image pickup means is disposed at a ceiling of the vehicle. Pryor teaches input apparatus for data communication (see abstract, lines 1-3) including wherein said image pickup means is disposed at a ceiling of the vehicle (1020, Fig 10). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the input apparatus of Pryor to the operation output device of Tamotsu as modified by Paul for sensing the action of a finger and performing the desire control function such as turning a radio on (column 14, lines 21-27).

6. Claim 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamotsu (JP 11-134090) in view of Paul et al (US Patent No.: 7,050,606) further in view of Peter et al (US Patent No.: 6,359,612).

As to claim 11, both Paul and Tamotsu does not teach the hand pattern switch

device wherein said hand pattern switch device includes operation start recognizing means for recognizing that an operation of said device is started when it is determined that the recognized hand pattern corresponds to a predetermined first hand pattern, and said controlled object selecting means selects a controlled object in accordance with a motion of the hand whose recognized hand pattern corresponds to a predetermined second hand pattern, after recognizing that the operation of said device is started.

Peter teaches an imaging system (column 1, lines 1-2) that includes wherein said hand pattern switch device includes operation start recognizing means for recognizing that an operation of said device is started when it is determined that the recognized hand pattern corresponds to a predetermined first hand pattern (e.g. Fig 5), and said controlled object selecting means selects a controlled object in accordance with a motion of the hand whose recognized hand pattern corresponds to a predetermined second hand pattern (e.g. Fig 6) , after recognizing that the operation of said device is started (see column 3, line 52-57, where gestures from an operator is analyzed and the corresponding operating steps are perform in conjunction with an image processor). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the imaging system of Peter to the operation output device of Tamotsu as modified by Paul to "control by gesture all the image processing steps which are otherwise common with mouse control, such as windowing, dimensioning of objects, 3D functions, etc." column 2, lines 18-20).

As to claim 12, note the discussion above, Peter teaches the hand pattern switch

device, wherein said operation start recognizing means includes confirming means for confirming that the hand of the first hand pattern does not grasp or touch a particular thing (e.g. see Fig 5) and then determining that the operation of said hand pattern switch device is started.

As to claim 13, note the discussion above, Peter teaches the hand pattern switch device, wherein the first hand pattern corresponds to one that is formed when the hand grasps a thing (e.g. see Fig 7), and the second hand pattern corresponds to one that is formed when the hand indicates a thing with its finger (e.g. see Fig 6).

As to claim 14, Tamotsu teaches the hand pattern switch device wherein said device includes start promoting means for promoting start of the operation amount changing means when the recognized hand pattern corresponds to a predetermined third hand pattern (e.g. item 4 in drawing 2) and a detected position of the hand in the image pickup zone is not displaced for a predetermined time (e.g. 0.5 seconds, page 6, [p][0046], line 7 of translation) after the controlled object is selected.

Conclusion

The prior art made part of the record and not relied upon is considered pertinent to applicant's disclosure.

Oka (Pub No.: US 2002/0214524) is cited to teach a gesture recognition unit that recognized a person's gesture and output a control signal.

Freeman et al (US Patent No.: 5594469) is cited to teach a hand gesture machine control system.

Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrae S. Allison whose telephone number is (571) 270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrae Allison

September 27, 2006

A.A.



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER